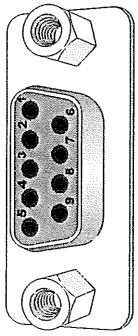
GPS: A 9-pin female 'D' connector for connecting the optional GPS receiver (**GP** option). Table 3-4 shows the pinout of the port. See section 3.5 for information about mounting and connecting the GPS receiver.

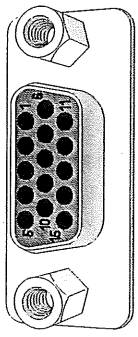


Pin #	Name	Description
1	GND	Chassis ground
2	Tx-	Transmit A (Tx-) Output
3	Rx+	Receive B (Rx+) Input
4	PPS+	1 PPS + Input
5	+VDC	+ 12 Volts DC out to supply GPS receiver
6	PPS-	1 PPS - Input
7	Tx+	Transmit B (Tx+) Output
8	Rx-	Receive A (Rx-) Input
9	GND	Chassis ground

Table 3-4: GPS Serial Port Pin Definitions

3.1.6. LTC Input, Secondary LTC Outputs, and Syncro Connections

GPIO: A 15-pin female 'D' connector provides two general purpose inputs, two general purpose outputs, secondary LTC1 and LTC2 outputs, and an LTC input. This connector is also used to connect the 5601MSC to a 5601ACO2 auto-changeover unit to establish synchronization of settings and time between the two units (syncro). A 15-pin male-male cable is used for this purpose. The pinout of the **GPIO** connector is shown in Table 3-5.



Pin #	Name	Description
1	LTC Input +	Linear Time Code Input +
2	LTC1 Out +	Secondary Linear Time Code Output 1 +
3	LTC2 Out +	Secondary Linear Time Code Output 2 +
4	GPO 1	General Purpose Output 1
5	GPO 2	General Purpose Output 2
6	GND	Signal Ground
7	GND	Signal Ground
8	Syncro Tx	Syncro Transmit
9	Syncro Rx	Syncro Receive
10	GND	Signal Ground
11	LTC Input -	Linear Time Code Input -
12	LTC1 Out -	Secondary Linear Time Code Output 1 -
13	LTC2 Out -	Secondary Linear Time Code Output 2 -
14	GPI 1	General Purpose Input 1
15	GPI 2	General Purpose Input 2

Table 3-5: GPIO Pin Definitions

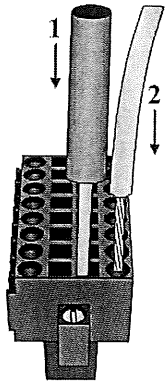
3.1.7. Analog Audio and Modem Connections

ATG 1 & 2: These two BNC connectors provide independent analog composite video test generator outputs compatible with the SMPTE 170M or ITU-R BT.1700-1 standards. The *ATG1 and ATG2* sub-menus in the *OUTPUT* root menu are used to configure these outputs.

AES 1 & 2: These two BNC connectors provide unbalanced 48kHz AES audio compatible with the AES3-1992 and SMPTE 276M standards. Balanced versions of these signals are available on the **AUDIO** 16-pin terminal strip. The *AES Audio* sub-menu in the *OUTPUT* root menu is used to configure the AES audio outputs.

DARS OUT: This BNC connector has an unbalanced 48kHz Digital Audio Reference signal (DARS) output compatible with the AES3-1992 and SMPTE 276M standards. A balanced version of this signal is available on the **AUDIO** 16-pin terminal strip. The *AES Audio* sub-menu in the *OUTPUT* root menu is used to configure the phase of the AES and DARS outputs.

AUDIO: This 16-pin terminal strip provides balanced versions of the AES1/AES2 and DARS signals as well as two balanced analog audio signals. The output audio cables can be secured into the removable portion of the terminal strip using a small screwdriver. The removable terminal block (Weidmuller part #174822) is then inserted into the rear panel and secured using the flange screws. The pinout of this connector is shown in Table 3-6.

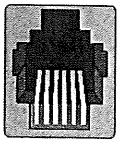


Right +	Left +
Right -	Left -
GND	GND
SNSA	SNSB
GND	GND
AES 1 +	AES 1 -
AES 2 +	AES 2 -
DARS +	DARS -

Table 3-6: AUDIO Removable Terminal Block Pin Definitions

The *ANALOG AUDIO* sub-menu in the *OUTPUT* root menu is used to configure the analog audio outputs. The SNSA and SNSB pins are used by the 5601MSC to detect connection to a 5601ACO2 and automatically enable highdrive. They may be left unconnected if this functionality is not desired.

MODEM:



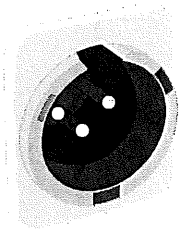
This RJ11 jack is used to connect the optional internal modem (**M** option) to the telephone line. The Modem sub-menu off the *GENERAL* root menu is used to configure the modem. See section 4.5.5 for more information.

IMPORTANT INSTALLATION NOTICE: For a reliable telephone connection to the modem in the 5601MSC, a direct telephone line must be used. This line must not pass through a PBX or similar key device.

3.1.4. Linear Time Code Connections

The *LTC 1* and *LTC 2* groups of sub-menus in the *OUTPUT* root menu are used to configure the LTC outputs. See section 4.4.1. The output level is adjustable from approximately 0.8V to 9.0V using the *Output Level* item on the *LTC* output menus. This assumes a load impedance of greater than 1kΩ.

LTC / IRIG OUTPUT 1 & 2: There are two 3-pin male XLR connectors for SMPTE/EBU Linear Time Code. When the IRIG option is installed, these outputs will also be able to provide IRIG timecode. They are labelled LTC OUT 1 and LTC OUT 2. These XLR connectors are the primary copies for each timecode output. The LTC OUT 1 connector is capable of driving +12 V_{DC} power for downstream Evertz clocks (see section 4.4.1.1).



Pin #	Name	Description
1	GND	Signal Ground
2	LTC+	Primary LTC/IRIG + output
3	LTC-	Primary LTC/IRIG – output

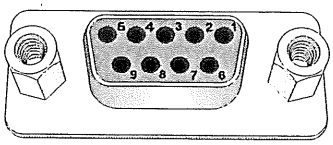
Table 3-2: LTC OUT 1 and LTC OUT 2 XLR Pin Definitions

Secondary copies of the two LTC/IRIG outputs are available on the GPIO 15-pin female 'D' connector.
The pinout of this connector is shown in Table 3-5. When LTC power is turned on for LTC1, this secondary output of LTC1 will not have +12V_{DC} power but will provide an isolated copy of LTC1. For details on wiring IRIG timecode, see section 2.3.5.

The primary LTC outputs on the XLR connectors are not fully isolated from the secondary copies on the GPIO DB15 connector. This means a wiring fault (such as a short) affecting an XLR output will also affect its copy on the GPIO connector (the exception being for LTC1 when power is turned on).

3.1.5. Serial Port and Modem Connections

COM: The COM connector is a 9-pin female 'D' connector for RS-232 serial communications. This port is configured for a 'straight through' RS-232 connection to a PC COM port and can be used for uploading firmware to the unit. Table 3-3 shows the pinout of the serial port in its default RS-232 DCE configuration. See section 5.2 for information on upgrading the firmware in the unit.



Pin #	Name	Description
1		
2	TxD	RS-232 Transmit Output
3	RxD	RS-232 Receive Input
4		
5	Signal Gnd	RS-232 Signal Ground
6		
7	RTS	RS-232 RTS Input
8	CTS	RS-232 CTS Output
9		

Table 3-3: COM Port Pin Definitions